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Mr. Carlos Martinez
Senior Environmental Engineer
Puerto Rico Sun Oil Company
P.O. Box 186
Yabucoa, PR 00767

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Re: The 1997 Process Sewer Assessment Report
(Soil Investigation and Removal)
Puerto Rico Sun Oil Company (PRSOC), Yabucoa, Puerto Rico.
EPA I.D. Number:PRD090074071

Dear Mr. Martinez:

The United States Environmental Protection Agency (EPA) has completed its review of the Puerto Rico Sun Oil Company's (PRSOC) Work Plan dated June 1999, for Soil Investigation and Removal in the Crude Naphtha Debutanizer Area (Revision 1.0), including PRSOC's response to EPA's comments letter dated June 2, 1999.

The revised work plan generally presents substantial improvements over the initial work plan in terms of meeting project-specific objectives, including:

- Confirmation of the source of observed free phase hydrocarbons
- Determination if there is a continuing release to the environment
- Delineation of the nature and extent of localized soil contamination
- Mitigation of localized contamination.

Furthermore, PRSOC has committed to additional investigation if soil and/or groundwater contamination is more widespread than expected. If necessary, expanded work plans will be prepared for further evaluation of soil and groundwater.

Nevertheless, several deficiencies were identified (see enclosure) and must be addressed prior to approving Revision 1.0 of the work plan.

With regard to the closed circuit television (CCTV) survey, PRSOC indicates their commitment to operating and maintaining the process sewer mains in accordance with standard industrial practices. PRSOC indicates that the facility does not intend to repeat the CCTV survey on a routine basis, but will perform such surveys on sections of the process sewer in the future if evidence is uncovered which indicates the potential for a release to the subsurface. However, it is unclear how these potential future releases will be identified. PRSOC should provide and

discuss examples of evidence that would forewarn PRSOC of a potential release situation, procedures for and frequency with which this evidence is collected and evaluated, types of situations that would trigger a repeat CCTV survey, as well as persons responsible for reviewing data and authorizing additional process sewer investigations, including CCTV surveys. Specific standard industrial practices to be followed for operation and maintenance of the process sewer mains should also be included or referenced.

Please submit the required information and a revised work plan addressing the enclosed comments to EPA within 45 days from the date of receipt of this letter.

In order for EPA to receive an acceptable submittal from PRSOC, we encourage you to participate in a conference call with the Agency to clarify and resolve all issues before you submit the revised work plan.

If you have any questions, please contact Sam Abdellatif of my staff, at (212) 637-4103.

Sincerely yours,

Nicoletta DiForte, Chief
Caribbean Section
RCRA Programs Branch

Enclosure

cc: Mr. Israel Torres, EQB w/encl.
Mr. Carl-Axel Soderberg, CFO w/encl.

PUERTO RICO SUN OIL COMPANY
YABUCOA, PUERTO RICO

TECHNICAL REVIEW OF
THE WORK PLAN FOR SOIL INVESTIGATION AND REMOVAL
IN THE CRUDE NAPHTHA DEBUTANIZER AREA (Revision 1.0)

Dated June 1999

General Comments on the Revised Work Plan

The majority of issues outlined in EPA's June 1999 general comment have been addressed in Revision 1.0 to the Work Plan for Soil Investigation and Removal in the Crude Naphtha Debutanizer Area. Following satisfactory response to the issues outlined in this letter, the proposed plan and contingency programs should allow PRSOC to meet the project objectives outlined in Section 2.0 of the revised work plan, including:

- Confirmation of the source of observed free phase hydrocarbon (FPH)
- Determination if there is a continuing release to the environment
- Delineation of the nature and extent of localized soil contamination
- Mitigation of localized contamination.

If the FPH and resulting soil and groundwater contamination is more widespread than expected, and this investigation does not fully meet EPA's request for source identification and characterization of contamination in soil and groundwater (as presented in the letter dated September 1, 1998), PRSOC is committed to additional investigation efforts.

PRSOC agrees in Section 2.5.1 of the revised work plan that, once the contingency program has been initiated, step-out borings from the excavation area will be continued until the extent of contamination has been delineated, or until it is determined that, due to the extent of contamination, an alternative approach to investigation may be more appropriate. In such a case, PRSOC will terminate the contingent soil investigation and will submit to EPA another revised soil sampling work plan for review and approval. PRSOC should provide EPA with timely notice and justification (including sampling locations and data) if the soil program must be terminated for this reason.

Similarly, in Section 2.5.2 of the revised work plan, PRSOC agrees that, if free product is present in either groundwater monitoring wells, or if groundwater analyses indicate that contaminants are present at levels exceeding appropriate groundwater risk-based screening levels (RBSLs), a separate groundwater-specific work plan will be prepared and submitted to EPA. The work plan will outline PRSOC's proposal for full delineation of the nature and extent of groundwater contamination in the area.

This phased approach appears consistent with EPA direction provided on page 2 of their April 2, 1999, letter to PRSOC.

Nevertheless, the revised work plan still does not discuss the regulatory and corrective action framework within which this investigation will be performed. As requested in EPA's letter dated April 2, 1999, if the source of contamination in the Crude Naphtha Debutanizer Area is determined to be separate from Solid Waste Management Units (SWMUs) or Areas of Concern (AOCs) listed in the Consent Order, this source should be investigated as a newly identified SWMU or AOC. If the source of the release is found to be a currently listed SWMU or AOC however, the proposed characterization and removal effort must be incorporated into the ongoing investigation for the source unit, in accordance with the Corrective Action Program and the Consent Order. Background detail on this issue should be included in the introductory section of the revised work plan.

Specific Comments on the Revised Work Plan

1. The facility's response to this comment is adequate. As indicated in the revised work plan, a flame ionization detector (FID) will be used to screen soil samples during excavation activities because of its sensitivity to semivolatile and saturated hydrocarbons present in FPH. Furthermore, although PRSOC has in only limited circumstances committed to the use of overnight laboratory analysis of screening soil samples, Section 2.3 of the plan discusses factors to be considered by the field supervisor in determining whether to send samples for overnight testing. If excavation efforts are terminated prematurely and confirmation samples show contaminant concentrations above applicable RBSLs, Section 2.4 of the revised work plan calls for an expansion of soil excavation efforts. In this case, another round of confirmation samples will need to be collected and analyzed to document achievement of remediation goals, incurring additional costs and delaying completion of the project until satisfactory data is received. Therefore, PRSOC is strongly encouraged to send samples for overnight analysis if there is any doubt as to the accuracy of field readings, visual observations, and/or the relationship between the two factors.

2. The facility's response to this comment is partially adequate. As presented in Section 2.4, confirmation samples will be collected according to a grid layout to ensure that a sufficient number of soil samples are collected regardless of the final extent of excavation. The overall number of confirmation samples has been increased from the original proposal, and the revised work plan now requires collection of confirmation samples at multiple depths on the excavation sidewalls.

   Although a fair amount of flexibility has been built into Section 2.4 regarding specific sampling locations, the revised work plan also specifies that samples from the excavation floor will be collected from the approximate midpoint of each 50 square foot quadrant. This sampling pattern ensures that the entire excavation will be

evaluated for chemical contamination; however, it may not adequately address localized hot spots of contamination. For this reason, the revised work plan should be modified to include collection of additional confirmation samples from the excavation floor directly beneath the areas with heaviest observed FPH contamination (if the areas are not adequately captured by quadrant midpoints).

3. The facility's response to this comment is partially adequate. Proposed laboratories have been identified in Section 2.3 for overnight sample screening analyses (TEG Laboratories, Puerto Rico) and in Section 2.4 for confirmation sample analysis based on Contract Laboratory Protocols (Accutest Laboratories, New Jersey). Nevertheless, a copy of each laboratory's Quality Assurance and Quality Control Plan should be provided.

4. The facility's response to this comment is partially adequate. Sections 2.4 and 2.5 discuss field activities to be undertaken if confirmation samples reveal residual contamination above RBSLs. However, several remaining concerns were identified during review of revisions to Section 2.4 and the contingent soil and groundwater sampling program in Section 2.5. The following concerns need to be addressed by PRSOC prior to EPA approval of the proposed investigation and removal effort:

   a. The last paragraph in Section 2.4 states that, "if RBSLs have not been achieved in all samples, the excavation may be extended in the horizontal or vertical direction, as necessary, until RBSLs are achieved or until the practicable limits of the excavation are reached." It is assumed that the excavation will be extended as necessary to address residual contamination above RBSLs, and that the field effort will recommence in the order outlined in Sections 2.2 through 2.4 of the revised work plan (including collection of another round of confirmation samples). Furthermore, since the initial set of confirmation samples would presumably have been collected because field screening results indicated that clean soil had been reached, explain how PRSOC will use field screening techniques in an expanded excavation effort. In this case, the facility may find it even more advantageous to rely on overnight laboratory analysis of soil samples, in conjunction with FID screening and visual and/or olfactory observations.

   b. Section 2.5.1 discusses the installation of step-out soil borings to be advanced if the proposed soil excavation program fails to remove all contaminated soil to levels below RBSLs. The text goes on to indicate that boring locations may be limited by structural impediments or other process-related constraints. Section 2.3 of the revised work plan (page 6) also indicates that the excavation cannot be extended in a northerly direction for the excavation area proposed due to structural impediments. Given the fact that the process pump which may have leaked lubrication oil lies north of the proposed excavation area, it is possible that contamination may be identified at the northern end of the

excavation. PRSOC must provide EPA with assurances in Section 2.5.1 that, if FPH contamination appears to originate from or extend to the north at levels exceeding RBSLs, the proposed step-out soil borings will be completed in an environmentally responsible manner, working around any structural impediments and process constraints. Alternatively, PRSOC may wish to submit a new soil sampling work plan encompassing techniques (e.g., angled soil borings, shoring of the excavation) more amenable to site conditions.

c. Section 2.5.2 discusses plans for groundwater sampling in the event that residual soil contamination (after termination of the soil excavation program) exhibits contaminant concentrations in excess of RBSLs for the soil to groundwater migration pathway. The entire section should be clarified to indicate that only one temporary groundwater monitoring well will be installed initially, followed by an additional down-gradient well, if necessary, to determine if any detected groundwater contamination is localized or more widespread.

d. The first paragraph in Section 2.5.2 also indicates that the initial well will be installed within the boundary of the excavation after backfilling and restoration. As indicated in the discussion above, FPH contamination may be uncovered at the northern end of the excavation area, closest to the process pump. In this case, it may not be possible to install the initial well down-gradient of the hot spot and yet still within the excavation area. Discuss this possibility and an alternative location (described, justified, and presented graphically) for the initial well in the Crude Naphtha Debutanizer Area.

e. Page 11 indicates that, "if the groundwater sample [collected at the initial well] shows no contamination above RBSLs, the temporary well may be decommissioned." It would be premature to decommission either of the proposed groundwater monitoring wells before completing a full evaluation of soil contamination in the area. According to Section 2.5.1, the groundwater investigation will only be initiated if residual soil contamination levels exceed RBSLs. Until soil contaminant migration is adequately controlled, the groundwater monitoring wells should be used by PRSOC as a means to ensure that groundwater does not become contaminated above RBSLs through continued leaching.

5. The facility's response to EPA's comments on project and waste management activities is partially adequate. Additional detail has been provided with regard to stockpiling of excavated soil, establishment of work zones, and roles and responsibilities for key project personnel. Appropriate maps have also been added to the work plan. Nevertheless, several issues remain to be resolved, including:

a. Waste Management

Section 2.6 has been added to the revised work plan to discuss management of excavated soil and waste characterization. Section 2.6 still does not address the length of time excavated soils will be kept on site in the Crude Naphtha Debutanizer Area or at the facility's Hazardous Waste Storage Area. Provide this information for both primary and contingent portions of the proposed effort.

Section 2.3 indicates that the suspected source of FPH is seepage of lubricating oil through the concrete slab from the process pump located at the process sewer clean-out about ten feet west of boring PS-12. Section 2.2 notes that concrete rubble removed from the excavation area will be placed directly into a lined roll-off container to await disposal as non-hazardous waste. Discuss the proposed procedure for characterizing the contaminated concrete rubble prior to management and disposal as non-hazardous waste.

b. Roles and Responsibilities

PRSOC has added project organization details in Section 4.0 of the revised work plan. This additional material is generally adequate, but the PRSOC Project Coordinator's responsibilities should be clarified with regard to contracting with the excavation subcontractor. The Project Organizational Chart in Figure 8 shows field subcontractors reporting directly to the environmental consultant's Project Manager. To ensure that all field team contracts are awarded and supervised appropriately, resolve this discrepancy and clarify who will be responsible for arranging and managing contracts with the excavation subcontractor.

c. Site Preparation and Restoration (NEW COMMENT)

Section 2.1 of the revised work plan presents details regarding establishment of work zones as part of the planned site preparation effort. This section should be further expanded to address the specifics of other required site preparation steps noted in Section 3.0 (e.g., marking the excavation area, gaining utility clearance, mobilizing roll-off containers and equipment). To ensure smooth implementation of the field effort, as well as worker health and safety, these activities need to be completed before initiating soil excavation.

Section 2.7 should be clarified to note that site restoration, including backfilling and restoration of the concrete pad, will not be initiated until validated confirmation sampling results are received from the laboratory

indicating that soil (and groundwater) issues have been resolved, or until the facility determines that an alternative method for evaluating and remediating FPH contamination must be sought. The section should be further revised to note that a sample of clean backfill material will be laboratory analyzed and the results reviewed prior to initiating site restoration activity. The text should also discuss the criteria which must be met for the backfill material to be considered "clean" and the procedures to be followed should the material exceed the criteria.

d. Project Schedule

Section 3.0 presents a schedule for implementation of activities outlined in the revised work plan, however only the primary excavation and confirmation sampling efforts have been included. Expand this section and Figure 7 to reflect an approximate schedule, not only for primary efforts, but also for the contingent soil and groundwater sampling program described in Section 2.5. The schedule should specifically show repeated site preparation (e.g., re-mobilization, concrete removal), soil excavation, and confirmation sampling steps. The schedule should also be revised to include completion of site restoration efforts.